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Photograph from Bermuda News Bureau

"GET A HORSE"—FOR A BERMUDA BUS IN PERFECT RUNNING CONDITION!

Although motors are banned on public roads in Bermuda, autos and trucks may be used on the lanes of private estates. This one, imported to transport guests from hotel to private beach, arrived before the owner could get an emergency driving permit. To save time he had the bus towed over the public road between dockside at Hamilton and the hotel (Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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"Low Countries" Caught in War's Squeeze Play

AS BORDER incidents start the cross currents of war eddying into Belgium and The Netherlands, two small neutrals find each border line a danger line.

The two "Low Country" nations, pieced together along the North Sea coast, form a wedge of neutrality with fighters on every side—England to the northwest, France to the southwest, and Germany on the east.

The Belgium of lacemakers, carillons, and poppy-strewn Flanders fields is a chip off the same continental block as the be-diked Netherlands of windmills, tulips, and cheese. The sister countries are similar slices of Low Country geography—a diked coastal zone of canal-striped gardens backed by higher pasture land.

Belgium, with a deeper grip on the continent, tilts its southern corner up into the Ardennes highlands, gentle mountains hardly half as high as the rounded Blue Ridge of Virginia, and possible inspiration for Shakespeare's Forest of Arden in *As You Like It*. This Belgian knob turns traffic north to the seaside plains.

Lumped together under the thumb of tyrannical Spanish kings, the two Lowland countries shared the name of Netherlands until the Dutch Republic pulled itself free in 1648. Napoleon patched them together again in a brief farewell union. They later demanded an independence apiece as separate neutral kingdoms.

	Area (sq. mi.)	*Population*	*Density (per sq. mi.)*	*Area of Colonies*
The Netherlands	12,704	8,640,000	680	790,000 sq. mi.
Belgium	11,775	8,360,000	710	902,000 sq. mi.

Though both kingdoms together are not half as large as Alabama, their energy at home and commerce abroad support the densest nation-wide population in the world. With intrepid colonists, like the one-legged Peter Stuyvesant of New Amsterdam fame, the Netherlands empire expanded to sixty times the mother country's size. The same Stanley who tracked down Dr. Livingstone presented Belgium with a Congo treasure-land of copper, gold, diamonds, and tin.

For expansion in more recent years, men of the Lowlands have invaded the sea, to capture acre after acre from seaweed and fish (illustration, inside cover). Polders—dike-enclosed lakes—are drained with windmill and canal, to become walled gardens of flowers and vegetables or lush meadow land; above the land level, surf batters constantly at fortresslike dikes. The stork's popularity is due to his appetite for animals that honeycomb these earthen defenses against the sea.

The land of The Netherlands curves like an amphitheater around the deltas of the Rhine and Scheldt Rivers and the basin of the disappearing Zuider Zee. Miles of dikes have held off the sea as the amphitheater floor has been pumped dry to extend to the fertile "Hollow-land" that supports almost half of the nation's crowded population. If The Netherlands should invite the sea in for reinforcement, about half of the country could be flooded enough to impede invasion.

While the fertility, commerce, and security of The Netherlands come from the sea, the wealth of Belgium is based on the land—coal, iron, and zinc. Flax, greenhouse grapes, and sugar beets are other products of the earth which give the country a high place in world trade (illustration, next page).

Note: See also "Belgium—Europe in Miniature," *National Geographic Magazine*, April, 1938; and "A New Country Awaits Discovery," September, 1933.

Bulletin No. 1, November 27, 1939.

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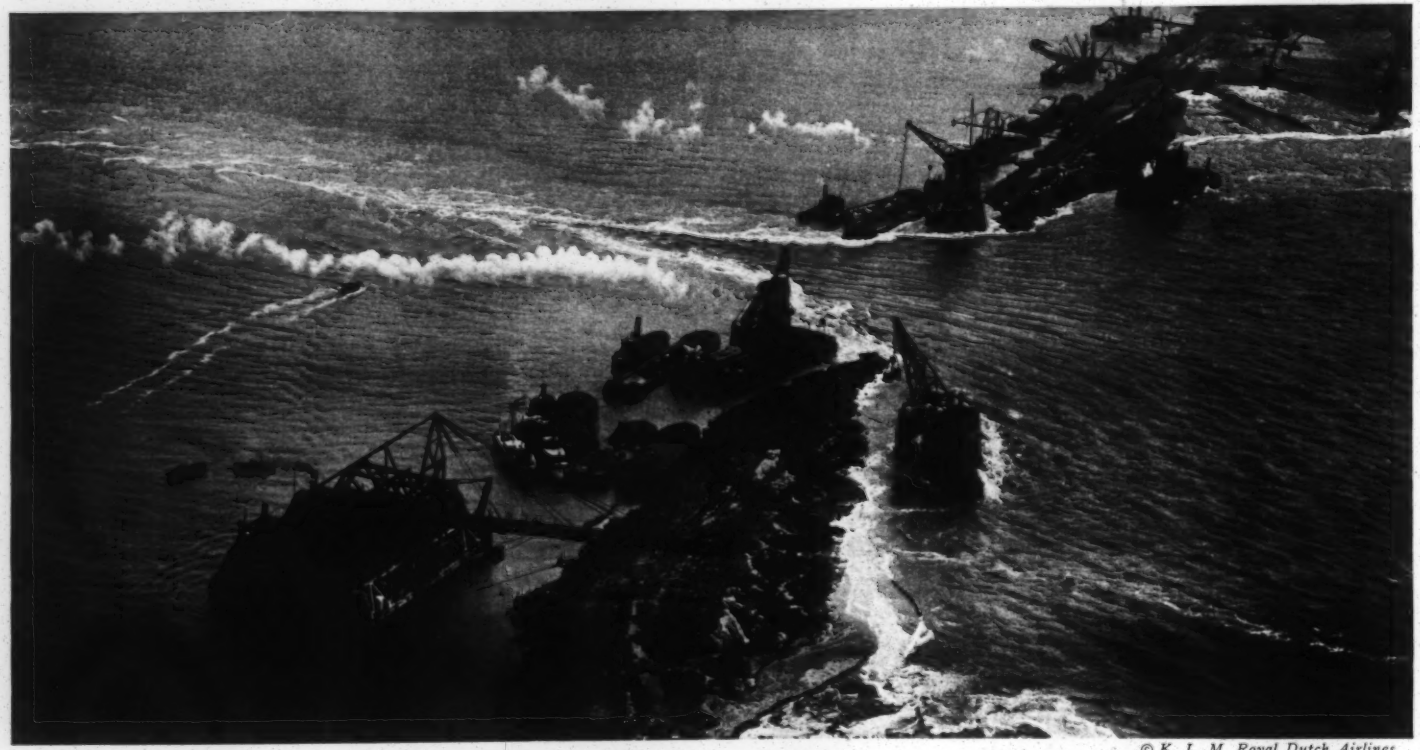

© K. L. M. Royal Dutch Airlines

CONSTANTLY AT WAR IS THE NETHERLANDS—WITH THE SEA

Only frail ramparts of clay keep nearly half the country from going back to the ocean or the marsh. Here tugs, barges, cranes, and thousands of men struggle to close the last gap in the great dike that made the Zuider Zee an inland lake. The rush of water through the breach indicates how The Netherlands can repel or retard a mechanized invader in certain parts of the country (Bulletin No. 1).

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Trade with Japan, Less Than Century Old, Amounts to Millions

LONG and delicate talks preceded the opening of business between Uncle Sam and the Mikado in 1853-4, as Commodore Perry, representing the United States, took sponge cake and rice wine with *samurais* and Shogun, against a background of American warships anchored off Yokohama.

Now the conversations between American Ambassador Grew and Japanese Foreign Minister Nomura deal with tense questions of both nations' policies, as the expiration date approaches for the 1911 trade treaty with Japan. The United States gave notice last July that the treaty would be allowed to expire in January.

Abrogation of the 1911 treaty of commerce and navigation between the United States and Japan does not in itself, however, place any restriction on the trade between the countries.

U. S. Navy Opened Up Japan to Trade without a Battle

The treaty protected trade with such provisions as a guarantee against embargo, protection for seamen, and a "most-favored-nation" clause regarding tariffs. The latter provided that both Japan and the United States should admit goods with duties as low as those granted to the most favored nation. Abrogation of the treaty simply removes the guarantee that such agreements will be continued.

Before 1911, however, and without the protection of the treaty, trade between the two nations had already grown to the $100,000,000 mark. All this development took place in the 47 years after Commodore Perry, with 2,000 men and ten ships, made his bloodless conquest of the Japanese market.

Prior to the United States naval expedition under Perry, Japanese ports had been closed to all foreign vessels except the Dutch since the 1630's. The death sentence had been the penalty for any Japanese citizen caught trying to leave his country.

A Portuguese merchant fleet approaching Japanese anchorage in 1638 had been burned, as warning to other foreign traders.

It remained for Commodore Perry to carry the Japanese their first mile of telegraph wire, their first locomotive (a miniature, with cars large enough for children only), their first photograph, their first lifeboats, their first "fire vessels" (steamboats), and such miscellaneous modern developments as rifles, sewing machines, clocks, and mechanical toys. Samples were distributed among warriors armored in iron and silk and paper, armed with swords and arrows and clumsy matchlock muskets.

Japan Third Best Customer of Uncle Sam

At first the newly opened Japanese market bought every type of western commodity, but could offer in exchange only silk and porcelain, tea, bamboo wares, novelties of bronze, curios of ivory. Before the end of the 19th century, Japan was importing equipment for railroads and docks, machinery for factories. Now her imports are raw materials; her exports are the very manufactured products of which Perry expected her to be a buyer.

Japan's purchases from the United States today are principally cotton, oil and gasoline, scrap iron, copper, and steel. The chief manufactures she buys from American mills are factory machinery, automobiles, and aircraft. Minor items include motion picture films, lead, gum rosin, and wood pulp. In 1938 Japan bought

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Photograph from Robert Schimp

BELGIUM HAS, IN HOEYLAERT, PERHAPS THE WORLD'S MOST VULNERABLE AIR RAID TARGET

In this city of greenhouses, at the edge of the Soignes Forest near Brussels, even hail is a catastrophe. One storm broke 176,000 panes. Because Belgium is one of the most densely populated regions on earth, such hothouses are needed to raise food at other than normal growing seasons. At Hoeylaert, in peace time, fine grapes also are produced for steamer baskets, holiday dinners, and sick rooms.

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Chinchilla: Aristocrat of Fur-Bearers

TO THE accompaniment of the chill winds of winter, a $30,000 shipment of chinchilla fur has reached the United States to take its place in the van of the season's fur coat parade. But $30,000 worth of fur will make only one or two coats. The world's supply of chinchilla pelts is strictly limited. So few are the chinchilla coats in existence that leading fur dealers know pretty accurately their number and ownership.

A single pair of chinchillas for breeding purposes has been sold for as much as $5,000, and the usual price in the United States is in excess of $3,000. Single pelts usually cost between $85 and $250, depending upon their quality. It takes approximately 140 to 150 skins to make a full-length coat, which sells in some cases for $50,000 or more. And yet the fur is less durable than most furs used for garments.

Incas Ate Chinchilla—but Not at $75 per Ounce

Little larger than a man's hand, the chinchilla weighs about 20 ounces when full grown. Its sale price, therefore, is between $75 and $125 per ounce. It is a rodent, and in appearance resembles two other members of the rodent family, the rabbit and the squirrel. The valuable little creature has dense, soft, pearly-gray fur. In its native Andean highlands, protective coloring enables it to lose itself among rocks.

In community burrows on the eastern slopes of the Andes in Chile, Bolivia, and Peru (illustration, next page), chinchillas live at altitudes between 8,000 and 12,000 feet. Nowhere else have they been found in a wild state. Emerging to feed at dusk and dawn, they take their roots and grasses sitting up like a squirrel with a nut. Although they prefer night life, the inquisitive rodents pop up from their burrows for any unusual daytime happenings. Gun shots or other disturbances bring them to their "front doors" to find out what goes on.

Hunted since ages past, chinchillas still offer hope to furriers for years to come. More than a century before Columbus discovered America, Incas wove warm cloth from the fur, even domesticated the animals, and ate their flesh after shearing the fleece. Some 40 years ago, chinchilla fur provided an important industry for Chile. Today, chinchilla farms are spreading throughout the United States, and even to lands across the Atlantic Ocean.

Dozen Chinchilla Immigrants for First U. S. Colony

First and foremost chinchilla farm in the United States was established because of an American mining engineer's enterprise while in Chile. Interested in preventing extermination of the animals, and not blind to wealth from the fur business, the American hired twenty-three Indians to bring back alive all the chinchillas they could find. After combing the province of Atacama, in North Chile, for three years, the natives returned with only eleven chinchillas. It took another three years to transport the rodents from an altitude of 11,000 feet to sea level slowly enough to allow them to become acclimatized.

Customs officials wound red tape all around the American engineer's plans for departure from South America; and only by bullying the captain of a Japanese steamer did he succeed in keeping his perishable cargo out of a hot, stuffy hold. As it was, he had to install a refrigeration system in the cage. Doubtless because

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one-thirteenth of all United States exports, including 15 per cent of the raw materials which this country succeeded in selling abroad. Japan is Uncle Sam's No. 3 customer, ranking after Canada and Great Britain.

Sixty-three Per Cent of U. S. Imports from Japan Is Silk

Uncle Sam, on the other hand, is the best customer of Japan. His purchases consist principally of silk (63 per cent). No other item on his 1938 bill from Japan approached the value of his $85,000,000 silk purchases. Numerous small items include manufactures such as artificial flowers (illustration, below). Crabmeat and tea, hat braid and cotton cloth, chinaware, and pyrethrum for insect poison are among the few commodities of which the United States bought as much as a million dollars' worth from Japan last year.

Note: See the following articles about Japan, its industries and trade, in the *National Geographic Magazine:* "Women's Work in Japan," January, 1938; "Friendly Journeys in Japan," April, 1936; "Japan, Child of the World's Old Age" and "Motor Trails in Japan," March, 1933; and "Tokyo Today," February, 1932.

See also in the GEOGRAPHIC NEWS BULLETINS: "A Silk Thread Links American Worker to Oriental Worm," February 21, 1938; "'Made in Japan' Label in Many American Shops," October 25, 1937; "Japan's Relative Scarcity of Home-Grown War Materials," October 11, 1937.

Bulletin No. 2, November 27, 1939.

Photograph from The Tokyo Asahi

WHERE ARTIFICIAL FLOWERS ARE BUSINESS, REAL ONES ARE PLEASURE

In the land of famed cherry blossoms and chrysanthemums, *ikebani* (flower arrangement) is studied in art classes. Artificial blossoms, however, have their place in business deals between Japan and the United States, as one of the commodities making up the 37 per cent of U. S. imports from Japan other than silk. In traditional dress, with western-style aprons and spectacles, they fashion successive layers of cloth petals (foreground) into finished blossoms to pile on the corner table (background). A radio enlivens the tedious labor of the home-workers.

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Mississippi Oil Rush Adds New Petroleum State

A "BLACK GOLD" rush has followed the dramatic news of striking oil in Mississippi's Yazoo County. Production got under way in September, and now drillers have brought in three wells yielding some 300 barrels a day. An earlier attempt to start an oil industry in the State had been unsuccessful.

Mississippi now becomes the twenty-second State in the Union to have producing oil wells. It brings more petroleum wealth to a nation that as recently as last summer had to throttle down two-thirds of its output temporarily in an oil price crisis.

The United States is by far the leading oil country of the world, contributing 61 per cent of all nations' total production. Last year U. S. oil wells poured forth nearly a billion and a quarter barrels—six times the output of Soviet Russia, which ranked second.

Texas Produces More Oil Than Any Foreign Nation

Texas alone, with more than 80,000 oil wells, accounts for about 14 per cent of the world's annual yield. This State by itself produces more than any foreign nation.

The vast United States petroleum industry is a young one, dating from Colonel Drake's striking oil in Pennsylvania just 80 years ago. But the industry now involves investments of some fifteen billion dollars. It has employees numbering three-quarters of a million and innumerable consumers, not the least of whom are the drivers of America's 31,000,000 motor vehicles (including automobiles, trucks, and tractors).

Pennsylvania gave the oil business its start when prospectors began bailing "rock oil" from shallow hand-dug wells instead of skimming it off the surface of seepages.

For nearly three decades, 98 per cent of the nation's oil came from Pennsylvania; now her percentage has dropped to 2. Texas, with 39 per cent, and California, with 17 per cent, now lead the oil parade. Twenty-two States have producing oil wells.

In the value of its varied and widely used products, petroleum ranks fourth among the giant industries of the country (steel, automobiles, meat, petroleum). It is necessarily, as fuel and lubrication, the basis for the second-ranking industry, the automotive.

Shaving Cream and Airplanes Use New Developments

The driver who pulls into a filling station and casually gives the "Fill 'er up" order is tapping an industry that reaches from coast to coast, from mile-deep oil wells through pipe lines, refineries, chemical laboratories, tank ships and cars, large central accounting offices, to the curbstone pump of vari-colored gasoline. Anyone who lights a kerosene lamp, buys an oil furnace, rides an airplane or a Diesel-powered passenger train, oils a squeaking hinge, crosses an asphalt-covered street, unwraps paraffin paper from a sandwich, or uses anything imported on an oil-burning boat, is taking advantage of the subterranean power pumped into circulation by the United States petroleum industry.

Glycerine and insecticides, anti-freeze chemicals for automobile engines and

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of the heat, the eleven, plus one born on the voyage, arrived nearly furless at Inglewood, California, to stock the country's pioneer chinchilla farm. Succeeding generations, however, have been as richly furred as ever.

Other farms in Idaho, Wyoming, Utah, Pennsylvania, Wisconsin, New York, and Virginia began with breeding stock from the California farm. Idaho's colony expanded in a few years from one pair to sixty chinchillas, valued at $100,000. In the Virginia colony, on the slopes of the Shenandoah Valley, are about 250 of the valuable little rodents.

Chinchillas Are Monogamists

In her native habitat, a female chinchilla bears from one to two litters a year; but in mild California and in Virginia, mama chinchilla can have three litters with an average of two young in each. After less than 20 years, the original 12 chinchillas from South America have multiplied to more than 1,000 on the California farm.

Chinchillas are monogamists. Once mated, they remain faithful until death; and papa chinchilla, a proud little gentleman, tenderly assists his mate in her maternal duties.

Note: Descriptions of the highland home of the chinchilla are found in "Twin Stars of Chile," *National Geographic Magazine*, February, 1929; "How Latin America Looks from the Air," October, 1927; and "A Longitudinal Journey Through Chile," February, 1922.

See also in the GEOGRAPHIC NEWS BULLETINS, for background about the people who first popularized chinchillas: "Revival of Inca Empire Proposed," January 9, 1939.

Bulletin No. 3, November 27, 1939.

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ONCE IT WAS CHINCHILLA FUR; NOW PONCHOS KEEP OUT THE COLD FOR SOUTH AMERICA'S MOUNTAIN DWELLERS

Modern Peruvians of the Andes, descendants of fur-wrapped Incas, find that the chinchilla is too rare to give them protection against the weather. Striped, hand-woven ponchos (left center) are worn shawl-like, dangling to the knees, when these packers shoulder their burdens and start up mountain trails where the sunshine cannot warm them. Here they are shown weighing the dried leaves of a plant native to their region, coca, from which cocaine is made for medical use.

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Bermuda Still Resists Motor Age

THE item of $3,500 in the Bermuda budget for coach and horses for the new governor calls attention to the law which forbids the use of motor cars on the public roads of the British colony (illustration, cover).

The preceding governor, while in office, petitioned the colonial assembly several times for permission to drive a car, but the petition each time was denied.

A governor has considerable authority over self-governing Bermuda's Parliament. He can veto its bills and even dissolve the assembly; but the former governor failed to carry his point with respect to motor transportation for the chief executive. This failure is said to have been a factor in bringing about his resignation.

Visitors Vote for Horse and Bicycle

Only twenty of the 360 islands comprising the Bermudas are inhabited. With a permanent population of over 30,000, the total area is about 20 square miles, or half again the size of the Mount Vernon estate when owned by George Washington. There are over 100 miles of smooth surfaced roads on the islands.

While Bermuda prohibits the operation of privately owned automobiles on the public roads, the fire department has two motor trucks. Two ambulances and seven sanitation and highway trucks also are motorized. Motor cars may be used in the Mid Ocean subdivision and elsewhere on private lanes, but there are only a little over two miles of such roadways.

A straw vote of a hotel's guests once showed all 474 opposed to the admission of the automobile. Tourists enjoy the leisurely carriage and bicycle, with the novelty of a motorless life. There are about 12,000 bicycles on the islands, including many tandems. And for speed there is the comparatively new 24-mile railway, with a statutory speed limit of 20 miles an hour.

Other Motorless Edens

In the use of his Victorian carriage, the Governor of the Bermudas is more formal than the King of England. The Governor uses his vehicle daily. The King rides in his ornate coach only for the coronation and on other important state occasions.

While Bermuda's motor restrictions are perhaps best known, there are other places where the automobile is outlawed. They are, for example, forbidden on the Italian island of Brioni, off the coast of Istria in the upper Adriatic; also in the little republic of San Marino within the boundaries of Italy; Mackinac Island in Lake Huron between the upper and lower Michigan peninsulas; the Parc Mont Royal of Montreal.

In many cities in the old world, such as Tangier, the streets are often too narrow to permit motoring. Chengtu and other Chinese cities have only in recent years displaced the wheelbarrow and sedan chair, which were for centuries "taxicabs" to the public, with motor cars.

Note: Additional photographs and descriptions of the quaint charm of this Atlantic island will be found in "Happy Landing in Bermuda," *National Geographic Magazine*, February, 1939; "Half Mile Down," December, 1934; and "The Islands of Bermuda," January, 1922.

See also in the GEOGRAPHIC NEWS BULLETINS: "Wings over Bermuda," October 25, 1937.

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quick-drying chemicals for brushless shaving creams, industrial alcohols, lubricating oils to fight friction in the galloping machinery of today's high speeds, nonnauseating anaesthetics, and plastics are among the varied products which accompany gasoline out of modern refineries.

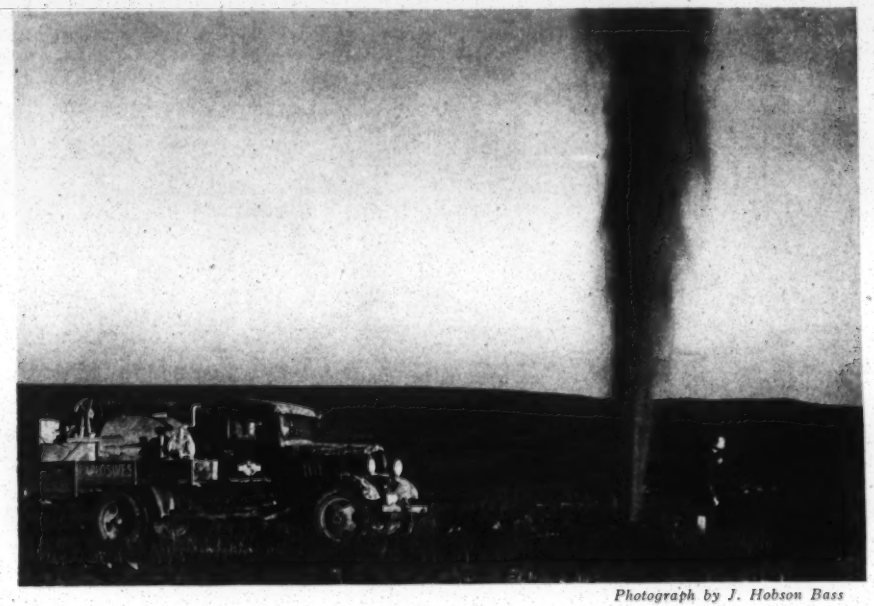
Explosives, Ink, and Rubber from By-Products

By-product chemicals take their places on the pharmacist's shelf, or go down on the farm to speed the ripening of fruit and vegetables when a late spring has cut down the normal growing period.

The preparation of synthetic rubber, explosives, and ingredients for printer's ink and photographers' supplies are other uses found for petroleum products. Recovery of hydrogen sulfide from petroleum gases has enabled refineries to make their own sulfuric acid, which oil processing requires in large and once expensive quantities.

Note: Some American oil wells and refineries are described in "Speaking of Kansas," *National Geographic Magazine*, August, 1937; "Northern California at Work," March, 1936; "Penn's Land of Modern Miracles," July, 1935; "Southern California at Work," November, 1934; "New York—An Empire Within a Republic," November, 1933; "New Jersey Now!", May, 1933; "The Historic City of Brotherly Love," December, 1932; "Colorado, a Barrier That Became a Goal," July, 1932; "Illinois, Crossroads of the Continent," May, 1931; "Louisiana, Land of Perpetual Romance," April, 1930; and "So Big Texas," June, 1928.

Bulletin No. 4, November 27, 1939.



Photograph by J. Hobson Bass

A NEW KIND OF OIL BOOM FOLLOWS "DRAKE'S FOLLY"

In 1859 Col. Edwin Drake, ex-railroad conductor, sank his capital into a "hole in the ground" near Titusville, Pennsylvania, which, to the amazement of his detractors, became the first successful oil well. A boom followed, similar to California's gold rush ten years earlier, as business booms have since followed the discovery of oil in twenty-one other States. To take the guess out of drilling for oil, the modern prospector in Kansas (above) employs a tame earthquake. He sets off dynamite, and measures (with a seismograph mounted on a truck) the earth vibrations following the explosion's boom. Certain echoes in the miniature quake betray the presence of oil pools.

Photograph by Rutherford from Galloway

EXCEPT FOR LINER AND ELECTRIC LIGHTS BERMUDA RECALLS BYGONE HORSE-AND-BUGGY DAYS

Wagons, victorias, and surreys still line up on Front Street along Hamilton's waterfront as they used to do when four-masted schooners sailed in proudly with passengers instead of with lumber. The large liner arriving from New York, however, is a reminder that Bermuda is the horse's last stand against the engine age. The only modern transportation with an undisputed place on the island is the railway, the single-track "main line" of which runs down Front Street.